Air Quality Permitting
Statement of Basis

August 9, 2005

Permit to Construct No. P-060322
and
Tier I Operating Permit No. T1-060323

Ash Grove Cement Company
Inkom, ID

Facility ID No. 005-00004

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AIR QUALITY DIVISION

Proposed PTC and Tier I Amendment for Public Comment

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Acronyms, Units, and Chemical Nomenclatures

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
dscfm	dry standard cubic feet per minute
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic feet
HAPs	Hazardous Air Pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
lb/ton	pound per ton
MACT	Maximum Achievable Control Technology
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
SIP	State Implementation Plan
SM	Synthetic Minor
SO_2	sulfur dioxide
T/yr	tons per year
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct, and IDAPA 58.01.01.300 for issuing Tier I operating permits.

2. FACILITY DESCRIPTION

Ash Grove Cement Company (Ash Grove) manufactures Portland cement. The Inkom facility is located adjacent to the quarry from which raw limestone, MgO limestone, clay, and shale are mined. The raw materials are removed from the bedrock by blasting with explosives, then bulldozing the rock to the quarry floor, and hauling the rock to the jaw crusher. The silica and iron ore are hauled to the plant and stockpiled. These materials are also crushed as needed.

The mined material is usually too large to be used in cement manufacturing at this point, so further processing is required. Material enters a crusher and is screened until the appropriate size is obtained. When the rock reaches the desirable size it is transported by a conveyor belt to storage silos for later use in the cement making process. The rock from the silos is measured, and then transported to a ball mill by conveyor belts. The material is ground, forming homogeneous slurry of water and rock.

The slurry is fed to the back of the kiln, which declines at a 4% slope. In order to form clinker the slurry must be heated to incipient fusion where calcination takes place. To perform the energy intensive task of making clinker, gases flowing counter current to the material flow are heated to an excess of 1650°C (3,000°F) by fossil and used fuels. Currently, the primary fuels used by the Inkom plant kiln are coal and whole tires.

The chemically reacting raw materials reach a temperature of approximately 1538°C (2800°F) before exiting the kiln and entering the clinker cooler.

The clinker exits the kilns at temperatures of 2000°F. It enters clinker coolers beneath the kiln where the heat is transferred from the clinker to the secondary air that reenters the kiln. All the forced air entering the cooler is utilized in the kiln as primary and secondary air for fuel combustion. The clinker leaves the cooler at around 260°C (500°F). Drag chains, elevators, and conveyor belts are used to transport the warm clinker from the clinker cooler to clinker storage.

The clinker is transported from the storage areas to the three finish ball mills where it is ground with gypsum to make cement. Separators are used to return oversized particles back to the mills for additional grinding. The plant can grind 450,000 tons of clinker per year. The cement is then pneumatically conveyed to the cement storage silos. Upon withdrawal from the silos, the cement is shipped bulk to customers.

A byproduct from the manufacturing process is a potassium sulfate solution. The product is leached from dust collected from the electrostatic precipitators (ESPs), making a potash solution. The potash solution is pumped to two lined evaporating ponds located near the quarry. Fertilizer companies transfer the solution to their trucks for distribution to potato farming customers.

3. FACILITY / AREA CLASSIFICATION

The facility is a designated facility as defined in IDAPA 58.01.01.006.27 (Portland Cement Plant). The AIRS Facility Subsystem classification is "A" because potential emissions of PM_{10}, SO_2, NO_x, and CO are greater than 100 tons per year. The facility is a major facility for PSD permitting purposes, because the facility's PTE is greater than 100 T/yr. This facility is a portland cement manufacturer, SIC code 3241. Ash Grove is located in AQCR 61 in Bannock County. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (PM_{10}, SO_x, O_3, NO_2, CO, and Pb). There are no class I areas within 10 km of the facility. A revised AIRS table is not included in the Appendix since there are no changes to this table as a result of this project.

4. APPLICATION SCOPE

Ash Grove has applied for a PTC modification to increase the coal handling limit from 70,000 to 84,384 tons per year.

4.1 Application Chronology

August 4, 2006	PTC and Tier I operating permit application received.
August 9, 2006	PTC application was declared complete.

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 Emissions Inventory

Estimated PTE Changes

Ash Grove estimated the changes in emissions in the permit application for all sources included in this modification. Refer to Tables 5.1 and 5.2 below. The estimated changes were reviewed and found to be consistent with DEQ methods and procedures. As presented in the November 27, 2002, Tier II operating permit, only increases of fugitive dust associated with coal handling are evaluated for this modification. This change is being done to provide flexibility for using lower-Btu coal in the kiln. Combustion emissions are not expected to increase since these emissions are determined by Btu's fired and clinker production (e.g., AP-42 Table 11.6-8 lists cement kiln emission factors in units of pounds per ton of clinker produced). Following this modification, the kiln production will not increase and the total Btu's of coal combusted will not increase; therefore, combustion emissions are not projected to increase as a result of this change. Since Ash Grove is classified as a major facility under the PSD program, emission estimates are needed to determine if the proposed modification is a "major modification." The estimates needed for this particular analysis are based on "actual emissions" instead of potential emissions.

Table 5.1 MAJOR MODIFICTION TEST FOR EXISTING UNITS - PM_{10} (tons/yr)

Source	2004-05 Average Throughput	Proposed Throughput	Baseline Actual Emissions	Projected Actual Emissions	Project Increase
Coal Handling	67,803	84,384	0.37	0.47	0.10
Project Total	---	---	0.37	0.47	**0.10**
Significant Emission Rate	15				
Does increase exceed Significant?	No				

Table 5.2 MAJOR MODIFICATION TEST FOR EXISTING UNITS - PM (tons/yr)

Source	2004-05 Average Throughput	Proposed Throughput	Baseline Actual Emissions	Projected Actual Emissions	Project Increase
Coal Handling	67,803	84,384	1.01	1.25	0.24
Project Total	---	---	1.01	1.25	**0.24**
Significant Emission Rate	25				
Does increase exceed Significant?	No				

5.2 Modeling

Modeling is not required for this project because, the emissions increase is less than the modeling thresholds presented in DEQ's Air Quality Modeling Guideline, dated December 31, 2002.

5.3 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201.....Permit to Construct Required

A permit to construct is required prior to construction or modification of any stationary source, facility, major facility, or major modification unless the source is exempt per IDAPA 58.01.01.220-223. For this project, the facility has requested a PTC and Tier I amendment, and this will be done using the procedures under IDAPA 58.01.01.209.05.c.

IDAPA 58.01.01.205. [40 CFR 52.21] ..... Permit Requirements for New Major Facilities or Major Modifications in Attainment of Unclassifiable Areas

IDAPA 58.01.01.205.01 [40 CFR 52.21(a)(2)(iv)]. This project to increase the processing rate limits for coal handling is not a major modification based on the following analysis.

A project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases - a significant emissions increase and a significant net emissions increase. The project is not a major modification if it does not cause a significant emissions increase. These rules specify a two part test to make this determination. The first test is used to determine if the project will cause a significant emissions increase, and this is given by 52.21(a)(2)(iv)(b) through (f). The second test, if required, is used to determine if the project will cause a significant net emissions increase, and this is given by 52.21(a)(2)(iv)(b) and 52.21(b)(3).

The "project", as defined by 52.21(b)(52) means "a physical change in, or change in the method of operation of, an existing major stationary source." For purposes of this analysis, the "project" includes changes for emissions units in the following process(es):

- Fugitive dust sources associated with coal handling

This permit modification pertains only to "existing emissions units," therefore, the test under 52.21(a)(2)(iv)(c) is used to determine if the project is significant. This regulation reads as follows:

A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in [52.21(b)(41)]) and the baseline actual emissions (as defined in [52.21 (b)(48)(i) and (ii)]), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in [52.21(b)(23)]).

This analysis was performed by the applicant, and it was reviewed by DEQ and found to be consistent with DEQ methods. The results are summarized in Tables 5.1 and 5.2 in the Emissions Inventory Section above. The results show that the project will not cause a significant emissions increase and, therefore, netting is not necessary and the project is not a major modification.

40 CFR 52.21(r)(6) specifies requirements for "projects at an existing emissions unit at a major stationary source in circumstances where there is a reasonable possibility that a project that is not a part of a major modification may result in a significant emissions increase and the owner or operator elects to use the method specified in paragraphs (b)(41)(ii)(a) through (c) of this section for calculating projected actual emissions." For this project to increase the coal handling limit, because the project does not debottleneck or increase emissions from the kiln process line or the cement process line, there is not a reasonable possibility that this project would result in a significant emissions increase. Therefore, Section (r)(6) does not apply.

IDAPA 58.01.01.209.05.c.....Permit to Construct Procedures for Tier I Sources

This PTC modification is for a Tier I source, therefore, the PTC is processed according to the procedures for a Tier I source. A draft PTC will be provided for public comment, affected state and tribal review per Sections 209, 364, and 365. The proposed PTC will also be sent to EPA for review, concurrently with the 30-day comment period, per Sections 209.05.c and 366.

The permittee may at any time after issuance of the PTC, request that the PTC requirements be incorporated into the Tier I operating permit through an administrative amendment in accordance with Section 381. In the PTC application, Ash Grove has requested that the PTC be issued to modify the existing Tier I and Tier II permits.

IDAPA 58.01.01.382.01.....Significant Permit Modification

This project is a Tier I significant modification since the proposed increases in throughput limits would contradict throughput limits in the existing Tier I permit. Also, the change is subject to the provisions of this section per IDAPA 58.01.01.382.01(e), because the change constitutes a modification under a provision of Title I of the Clean Air Act.

40 CFR 60 Subpart F .....Standards of Performance for Portland Cement Plants

Applicability of Subpart F is not changed as a result of this permit modification.

5.4 Permit Conditions Review

This section describes only those permit conditions that have been revised, modified or deleted as a result of this permit action. All other permit conditions remain unchanged.

PTC Section 2 Condition 4, and Tier I Condition 15.3

The annual process rate limit for coal handling was increased from 70,000 to 84,384 tons of coal per year.

PTC Appendix, and Tier I Condition 15.1

The PM emissions limit for coal handling was increased from 0.74 to 1.25 t/yr and the PM_{10} emissions limit was increased from 0.18 to 0.47 t/yr.

6. PERMIT FEES

A PTC application fee of $1,000.00 applies in accordance with IDAPA 58.01.01 224, and this fee was received on August 10, 2006. A PTC processing fee of $1,000.00 was assessed in accordance with IDAPA 58.01.01.225 as shown in Table 5.1. Since this is a major facility, Tier I fees are also applicable. As of August 10, 2006, Ash Grove is current with the Tier I fees.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	**Annual Emissions Increase (T/yr)**	**Annual Emissions Reduction (T/yr)**	**Annual Emissions Change (T/yr)**
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM_{10}	0.1	0	0.1
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0	**0.1**
Fee Due	**$ 1,000.00**		

7. PERMIT REVIEW

7.1 Regional Review of Draft Permits

A facility draft PTC which included proposed modifications to the Tier I operating permit was sent to the DEQ Pocatello Regional Office on August 9, 2006, for review. No changes were requested.

7.2 Facility Review of Draft Permits

A facility draft PTC which included proposed modifications to the Tier I operating permit was emailed to Ash Grove on August 9, 2006, for review. No comments or changes were requested.

7.3 Public Comment

In accordance with IDAPA 58.01.01.209.05(c) and 364, a 30-day comment period will be provided for the public, affected states and tribes on the draft PTC and the Tier I operating permit amendment.

IDAPA 58.01.01.008.01 defines affected states as: “All states: whose air quality may be affected by the emissions of the Tier I source and that are contiguous to Idaho; or that are within 50 miles of the Tier I source.” A review of the site location information included in the permit application indicate that the facility is located within 50 miles of tribal land. Therefore, the Fort Hall Indian Reservation will be provided an opportunity to comment on the draft PTC and the Tier I operating permit amendment. The state of Utah is located 53 miles from the facility and is not subject to notification. The EPA will also be provided with an opportunity to comment on the proposed Tier I amendment, and this will occur

concurrently with the 30-day comment period in accordance with IDAPA 58.01.01.209.05.c.iv and 366.

8. RECOMMENDATION

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that proposed PTC No. P-060322, including the draft Tier I modifications, be issued for public comment, affected states and EPA review in accordance with IDAPA 58.01.01.209.05(c) for the proposed modification. The project does not involve PSD requirements.

KH/bf Permit No. P-060322 and Permit No. T1-060323

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